In the Specification

Amend paragraph [0007] as follows:

[0007] 2. a first rapid thermal anneal (RTA) step: titanium reacts with silicon forming $TiSi_2$ ((C49) phase); this step is done in a nitrogen atmosphere to avoid forming $TiSi_2$ on the oxide and forms a TiN layer on the titanium;

Amend paragraph [0015] as follows:

[0015] Aluminides of Ti and Ta are useful barrier materials in the manufacture of integrated circuits. During the manufacture of integrated circuits Ti and Al layers often react to form titanium aluminide during wafer processing. However, formation of titanium aluminide during wafer processing is detrimental to the wafer because it introduces additional stresses in the film and also consumes Ti and Al from interconnect wiring. In order to prevent titanium aluminide formation and consumption of interconnect metal in the wafer during processing, it is desirable to deposit titanium aluminide by sputtering a titanium aluminide target. Depositing a titanium aluminide film eliminates the introduction of stresses associated with formation of titanium aluminide and eliminates unnecessary consumption of interconnect metal.

Amend paragraph [0019] as follows:

[0019] Enhanced purity stoichiometric and non stoichiometric articles, such as sputtering targets, in accordance with one aspect of the invention ~~which~~ possess a density of 95% or higher of theoretical density and a microstructure not exceeding 20 microns, depending on the chemistry and composition of the article, e.g. target, and its constituent elements.

Amend paragraph [0020] as follows:

[0020] Enhanced purity articles, such as targets, are defined as having an overall purity (combination of metallic, non-metallic and gaseous components) higher than that of the starting material. The articles may be manufactured by using a combination of reactive sintering, sintering and vacuum hot pressing. It has been found that such a combination can be performed in situ in a vacuum hot press which enables the process to be a one-step process to manufacture stoichiometric and non stoichiometric articles, such as sputtering targets starting from elemental powders, (i.e. elements in powder form).

Amend paragraph [0021] as follows:

[0021] Fig. 1 is a photomicrograph of the grain structure of $TiAl_3$ target produced in accordance with an embodiment of the invention (100X, grain size 18 ~~microns);~~ microns).

Amend paragraph [0022] as follows:

[0022] Fig. 2 is a graph showing the x ray diffraction pattern of a target produced in accordance with one embodiment of the invention ~~invention;~~ invention.

Amend paragraph [0023] as follows:

[0023] Fig. 3 is a graph of an analysis of titanium ~~silicide; and~~ silicide.

Amend paragraph [0030] as follows:

[0030] A preferred embodiment of the method of the invention comprises a process that includes reactive sintering and vacuum hot pressing together. This process results in a high density blank, i.e., greater than 95% density, ~~for~~ which can be utilized to form sputtering targets~~, and to sputtering targets produced therefrom~~. The invention includes a method of making an article particularly useful as a sputtering target having enhanced purity comprising metal (M) and either silicon (Si) or aluminum (Al), from powder. For the method for producing an aluminide sputtering target, M comprises Ti, Fe, Co, Ni and/or Ta, and for the method for producing a silicide target, M comprises Ti, Ta, Ni, Cr, Co and/or Pt. ~~The preferred embodiment of the method may~~ Preferred embodiments of the invention can comprise the following steps, which may be combined or rearranged in order:

Amend paragraph [0031] as follows:

[0031] (a) providing a heat-resisting pressing die having a cavity with a configuration and dimensions desirable for producing the desired article, for example a sputtering ~~target. The~~ target; the die has at least one movable pressing ram adapted for application of axial compaction forces to material in said cavity;

Amend paragraph [0064] as follows:

[0064] It has also been found that sintering powders which react exothermically ~~results~~ result in adiabatic temperature rises. This sudden rise in temperature causes impurities to volatilize, and the volatized materials ~~which~~ can then be evacuated with a vacuum system. The resulting grain size of the near-net sized product depends on the particle size distribution of elemental powders, and the nucleation and growth of new phases. Since the reaction occurs between powders which are uniformly blended, there are innumerable nucleation sites for new phases. Grain growth typically requires high temperatures but the new phases are not held at elevated temperature for extended periods of time, and grain growth is restricted, which results in a fine grain structure on the sputtering target. The exact grain size or range depends on the starting material. High pressures for densification are applied when the temperature rises because the reacted powders are then more ductile and easy to compact. Accomplishing this results in high densities. As mentioned previously, achieving desired phases in the product depends on control of the reactive sintering and densification processes in the vacuum hot press. The following examples illustrate the process. The invention described above describes a method to achieve success.

Amend paragraph [0070] as follows:

[0070] An example of a method of making a non-stoichiometric $TiSi_2$ blank useful as a sputtering target is described in Table 3.

Amend paragraph [0071] as follows:

[0071] Fig. 3, which represents the analysis of titanium silicide target using x ray ~~diffraction~~ diffraction, revealed that the target contained two phases as expected. The two phases were $TiSi_2$ and Si. Further analysis indicated that the $TiSi_2$ is in the C54 phase, which is a low resistivity phase. The microstructural analysis showed a fine microstructure with an average grain size less than 20 microns (Fig. 4). GDMS, LECO and SIMS analysis showed that the overall purity of the target was higher than that of the starting powders.